

1 MAY 2005

10/534240

PCT/EP2003/010760



## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 41 222.fl.sev	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP2003/010760	International filing date (day/month/year) 26 September 2003 (26.09.2003)	Priority date (day/month/year) 08 November 2002 (08.11.2002)
International Patent Classification (IPC) or national classification and IPC C21C 5/46		
Applicant SMS DEMAG AKTIENGESELLSCHAFT		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 2 sheets.

3. This report contains indications relating to the following items:

- I  Basis of the report
- II  Priority
- III  Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV  Lack of unity of invention
- V  Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI  Certain documents cited
- VII  Certain defects in the international application
- VIII  Certain observations on the international application

Date of submission of the demand 21 May 2004 (21.05.2004)	Date of completion of this report 04 November 2004 (04.11.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2003/010760

## I. Basis of the report

## 1. With regard to the elements of the international application:\*

the international application as originally filed  
 the description:

pages 2-10, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages 1, filed with the letter of 22 October 2004 (22.10.2004)

the claims:

pages 4-12, as originally filed  
 pages \_\_\_\_\_, as amended (together with any statement under Article 19)  
 pages \_\_\_\_\_, filed with the demand  
 pages 1-3, filed with the letter of 22 October 2004 (22.10.2004)

the drawings:

pages 1/4-4/4, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_  
 the sequence listing part of the description:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.  
 These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).  
 the language of publication of the international application (under Rule 48.3(b)).  
 the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

contained in the international application in written form.  
 filed together with the international application in computer readable form.  
 furnished subsequently to this Authority in written form.  
 furnished subsequently to this Authority in computer readable form.  
 The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
 The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4.  The amendments have resulted in the cancellation of:

the description, pages \_\_\_\_\_  
 the claims, Nos. \_\_\_\_\_  
 the drawings, sheets/fig \_\_\_\_\_

5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.  
PCT/EP 03/10760

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims	1-12	YES
	Claims		NO
Inventive step (IS)	Claims	1-12	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-12	YES
	Claims		NO

## 2. Citations and explanations

## 1. Reference is made to the following documents:

D1: DE 66 05 433 U (VOEST AG) 21 May 1970 (1970-05-21)

D2: US-A-3 561 744 (ALTMAN DONALD L ET AL) 9 February 1971 (1971-02-09)

D3: DE 15 83 232 B (DEMAG AG) 9 June 1971 (1971-06-09)

D4: DE 12 99 672 B (DEMAG AG) 24 July 1969 (1969-07-24)

D5: DE 11 73 113 B (BETEILIGUNGS & PATENTVERW GMBH) 2 July 1964 (1964-07-02)

D6: US-A-5 364 079 (GRUBER RUDOLF ET AL) 15 November 1994 (1994-11-15)

D7: DE 199 28 195 A, cited in the application.

## 2. Novelty and inventive step (PCT Article 33)

D7, cited in the application, describes a detachable fixing of a converter vessel to a support ring and discloses the features of the preamble of claim 1. D7 is considered the closest prior art.

The differentiating feature is the fixing mechanism, which is based on a screw contact. The subject

matter of claim 1 is therefore novel (PCT Article 33(2)).

The problem addressed by the present invention can therefore be considered that of finding a fixing mechanism that is quicker and easier to handle.

The problem is solved with the characterising features of claim 1 by a hinged closure.

The prior art discloses numerous fixing variants for fixing a converter vessel to a support ring (D1 to D6), but these variants are ultimately always based on a screw principle.

The prior art does not describe fixing via consoles which can be held via a hinged closure and are easily detachable.

The principle of the hinged closure is well known (e.g. box closure according to DIN/RN 0009).

However, none of the documents suggests using this fixing principle according to the characterising portion of claim 1 with a converter with corresponding dimensions and weights.

The subject matter of claim 1 therefore involves an inventive step (PCT Article 33(3)).

Claims 2-12 are dependent on claim 1 and therefore likewise meet the PCT novelty and inventive step requirements.

TRANSLATION (HM-621PCT -- IPER):

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JC17 Rec'd PCT/PTO 06 MAY 2005

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Re Point V

Substantiated determination according to Rule 66.2(a)(ii) with respect to novelty, inventive activity, and commercial viability; documents and declarations in support of this determination.

1. The following documents are cited:

D1: DE 66 05 433 U (VOEST AG) May 21, 1970 (1970-05-21)

D2: US-A-3 561 744 (ALTMAN DONALD L et al.) February 9, 1971  
(1971-02-09)

D3: DE 15 83 232 B (DEMAG AG) June 9, 1971 (1971-06-09)

D4: DE 12 99 672 B (DEMAG AG) July 24, 1969 (1969-07-24)

D5: DE 11 73 113 B (BETEILIGUNGS & PATENTVERW GmbH) July 2, 1964 (1964-07-02)

D6: US-A-5 364 079 (GRUBER RUDOLF et al.) November 15, 1994  
(1994-11-15)

2. Clarity -- Article 6 PCT

The introductory clause of claim 1 is unclear, because the wording "wherein the trunnion ring rests on the upper flange by means of claws on the wall of the vessel" is incomprehensible. On the basis of the specification (p. 5), the abstract, and the drawings, the following wording was probably intended: "wherein claws (6) distributed along the circumference of the vessel wall (1b) rest on the upper flange (3a) of the trunnion ring (3)." Therefore, it is suggested to the applicant that he reword the introductory clause accordingly.

3. Novelty and Inventive Activity -- Article 33 PCT

The prior art discloses many different variations for mounting a converter vessel on the trunnion ring (D1 to D6), but ultimately they are always based on a bolted connection.

Mounting by means of brackets, which can be tensioned and easily released by means of a hinged closure, is not described in the prior Article. The object of Claim 1 and of dependent Claims 2 to 12, which concern detail specifications, would thus be novel relative to D1 to D6 upon clarification (see Point 2 above).

The principle of the hinged closure is sufficiently well known (e.g., box closure in accordance with DIN/RN 0009). However, the use of this mounting principle in accordance with the characterizing clause of Claim 1 in a converter is not

suggested by the documents.

The object of Claims 1 to 12 would thus satisfy the criteria of Article 33 PCT.

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International File No.:

Re Point V

Substantiated determination with respect to novelty, inventive activity, and commercial viability; documents and declarations in support of this determination.

1. The following documents are cited:

D1: DE 66 05 433 U (VOEST AG) May 21, 1970 (1970-05-21)

D2: US-A-3 561 744 (ALTMAN DONALD L et al.) February 9, 1971  
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D4: DE 12 99 672 B (DEMAG AG) July 24, 1969 (1969-07-24)

D5: DE 11 73 113 B (BETEILIGUNGS & PATENTVERW GmbH) July 2,  
1964 (1964-07-02)

D6: US-A-5 364 079 (GRUBER RUDOLF et al.) November 15, 1994  
(1994-11-15)

D7: DE 199 28 195 A, cited in the application. [Cited as A1 in the application -- Tr. Ed.]

2. Novelty and Inventive Activity -- Article 33 PCT

The document D7, which is cited in the application, describes the releasable mounting of a converter vessel on a trunnion ring and discloses the features of the introductory clause of Claim 1. It is regarded as the closest prior Article

A different feature is the mounting mechanism, which is based on a bolted connection. The object of Claim 1 is thus novel (Article 33(2) PCT).

The problem to be solved with the present invention can thus be seen as finding a mounting mechanism that can be operated more quickly and easily.

This problem is solved with the characterizing features of Claim 1 by a hinged closure.

The prior art discloses many different variations for mounting a converter vessel on the trunnion ring (D1 to D6), but ultimately they are always based on a bolted connection.

Mounting by means of brackets, which can be tensioned and easily released by means of a hinged closure, is not described in the prior Article

The principle of the hinged closure is sufficiently well known (e.g., box closure in accordance with DIN/RN 0009).

However, the use of this mounting principle in accordance with the characterizing clause of Claim 1 in a converter with the corresponding dimensions and weights is not suggested by the documents.

The object of Claim 1 is thus based on inventive activity (Article 33(3) PCT).

Claims 2-12 are dependent on Claim 1 and thus also meet the requirements of the PCT with respect to novelty and inventive activity.